

## **REMARKS**

### **I. Status of Claims**

Claims 1, 3, 13, 15 and 16 have been amended.

Claims 2 and 11 have been cancelled.

Claims 1, 3-10 and 12-16 are thus pending in the application.

### **II. Claim Rejections – 35 U.S.C. § 103(a)**

The Examiner rejects claims 1-16 under 35 U.S.C. § 103(a) as being unpatentable over Yamashita in view of Yamaguchi et al. The rejection is respectfully traversed.

With respect to independent claim 1, the Examiner alleges that Yamashita teaches a method for providing a multicast service from a macrocell or a microcell to a mobile station in a mobile communication system having a hierarchical cell structure in which at least one microcell area overlaps one macrocell area, by referencing col. 3, lines 6-16, col. 4 line 66 – col. 5, line 12, and Fig. 1; determining whether a measured field intensity of available channels in the macrocell where the microcell area overlaps satisfies a required threshold level for a specific multicast service, by referencing col. 6, lines 23-34; and receiving by the mobile station the specific multicast service from a base station that controls the macrocell, if the measured field intensity satisfies the required threshold level, by referencing col. 5, lines 30-39 and col. 6, lines 35-51.

The Examiner admits that Yamashita fails to explicitly teach a carrier-to-interference ratio (C/I), but instead teaches a field intensity of available channels. To cure the deficiencies of Yamashita, the Examiner alleges that using a quality indicator such as a measured carrier-to-interference ratio (C/I) and to determine if the measured C/I satisfies the required C/I to provide a service is very well known in the art, since in existing mobile systems a mobile station accesses the best (e.g. higher carrier-to-interference ratio or carrier-to-adjacent ratio) available cell in the radio network, in order to select an optimum available channel in the

radio network. The Examiner further alleges that Yamaguchi et al. teaches a method of adaptively assigning a packet rate to a mobile station based on measuring a signal quality of a received signal from a base station, wherein a received signal quality at a mobile station is defined by an interference level at the mobile station, by referencing page 1, paragraphs [0010] – [0011] and page 3, paragraphs [0048] – [0050].

According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using a quality indicator such as a measured carrier-to-interference ratio (C/I) to adaptively assign a packet rate to a mobile station of Yamaguchi et al. to the method of Yamashita in order to decrease undesirable interference to adjacent cells of adjacent base stations and to maintain a high signal quality of a received signal from a base station in communication with the mobile station as per the teachings of Yamaguchi et al.

Applicants respectfully submit that neither Yamashita nor Yamaguchi et al., taken singly or in combination (assuming these teachings may be combined, which Applicants do not admit), disclose or teach all of the limitations of the presently claimed invention. Among other things, the references do not disclose or teach “comparing, by the base station controller, the measured C/I with a C/I required based on the determined data rate,” as recited in amended claim 1.

Yamashita discloses a mobile station that determines the **moving speed** corresponding to the fading rate to a fluctuation level of **field intensity** (received signal strength indication (RSSI)). The mobile station also measures the **field intensities** of channels that can be used in communication with the macrocell. The measured field intensity (RSSI) of Yamashita is not analogous to the measured carrier-to-interference ratio. The carrier-to-interference ratio is a ratio of an amplitude of a radio frequency carrier to the amplitude of any form of interference including both noise and other **undesired** carriers. RSSI is merely measured power of a received signal. Moreover, a base station in Yamashita provides a mobile station with information about system state and the mobile station selects an optimum channel based on information about the moving speed thereof and the provided

information about system rate, thereby alleviating the load applied to a radio base station side.

In the Applicants' disclosed method, a base station controller compares a C/I of a macrocell measured and transmitted from a mobile station with a C/I based on the determined data rate of a multicast service requested by the mobile station and orders the mobile station to perform a handover from the microcell to the macrocell, if the measured C/I is higher than the required C/I. Accordingly, the reference teaches that the mobile station selects channels according to the moving speed thereof and fails to disclose a multicast service method.

Accordingly, there is nothing in the alleged combination of Yamashita and Yamaguchi et al. that discloses or teaches comparing, by the base station controller, the measured C/I with a C/I required based on the determined data rate.

In view of the above reasons, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness for combining Yamashita and Yamaguchi et al. To establish a *prima facie* case of obviousness, three basic criteria must be met. *See* M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to come the reference teaches.

The first criterion is not met. Applicants find no teaching or suggestion to support the Examiner's asserted motivation to combine the references because the Examiner has not established that a multicast service is a service recognized in the mobile radio communication system of Yamashita and the mobile communication system of Yamaguchi et al., and that measuring a received signal quality which includes an interference level and a signal-to-interference ratio is a measured carrier-to-interference ratio in which the multicast service comparing, by the base station controller, the measured C/I with a C/I required based on the determined data rate. Accordingly, the Examiner must provide a basis in fact and/or technical reasoning in the prior art for combining the mobile communication systems.

Applicants respectfully submit that the asserted combination of Yamashita and Yamaguchi et al. fails to establish a *prima facie* case of obviousness of independent claim 1,

or any claim depending therefrom. Accordingly, the rejection of claim 1 should be withdrawn. The rejection of claims 3-10 should also be withdrawn based on the claim dependency from respective base claim 1.

The rejections of claims 12, 14 and 16, reciting "a multicast service using a carrier-to-interference ration (C/I) in a hierarchical cell structure in a mobile communication system," should also be withdrawn for at least the same reasons given to independent claim 1. Moreover, the rejection of claims 13 and 15 should be withdrawn based on the claim dependency from respective base claims 12 and 14.

### CONCLUSION

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Please grant a one (1) month extension of time required to enter this response.

Respectfully submitted,



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